Page 146

What is energy?

The wind is blowing. Thunder makes a loud noise. The wind sounds like a train. The windows break. Houses break. Cars are broken. There is a lot of water or flooding.

The tornado stops.

The next day, the wind blows. It is gentle. Wind is moving air. Wind has **ENERGY.**

What has energy?

What caused the damage?

What does the wind sound like?

What was damaged by the wind?

Page 147

Energy, Work and Power

Wind moves a stick. Wind moves a piece of paper. Wind moves your hair. The ability to work or cause change is called energy.

What is energy?

When you work, you transfer some energy to the object.

The object that you touch now has more energy. Energy is transferred.

Transfer your energy to the top. Right now the top has no energy. Pick and up and spin it. You are transferring your energy to it.

You need power to transfer energy. A tornado has more power than a gentle wind.

What has more power?

Page 147

Kinetic Energy

There are two types of energy- kinetic energy and potential energy.

It is kinetic energy is the object is moving.

It is potential energy is the object is at rest.

The word kinetic means moving.

What does the word kinetic mean?

Page 148

Factors Affecting Kinetic Energy- title

Kinetic energy depends on mass. Mass is how much space something takes up.

Kinetic energy depends on velocity. Velocity means speed.

Two bowling balls that are the same size and weight and the same speed or velocity will transfer the same energy to the bowling pins.

A bowling ball that goes faster will transfer more energy than a slower ball.

To transfer energy fast to the bowling pins, roll the ball fast or slow. (Circle your answer.)

Page 149

Potential Energy- title

An object that is not moving has no kinetic energy. An object that is not moving can have energy. A wind-up toy has stored energy if you wind it up.

What has stored energy?

Gravitational Potential Energy- title

If an object is up really high, it has potential gravitational energy. The higher you are, the more potential gravitational energy you will have.

Page 149

Draw a ladder. Label each rung A-b-c-d-e-f

Where do you have the greatest potential gravitational energy?

If at the same height, an object that weighs more has more potential gravitational energy.

Mrs. Erickson weighs 130 pounds. Her dog, Diesel, weighs 60 pounds. Who weighs more?

Who has more potential gravitational energy?

(Refer to pictures of skiers to extend learning opportunity.)

Page 150

Elastic Potential Energy- title

An object gets or gains a different type of energy when stretched. Stretch your arms. Stretch your legs. Stretch an elastic- but be careful!!!! The elastic has stored energy!

Page 150

The person in the picture has a bow and arrow. The bow has a string on it. The person pulls the arrow back. The string is stretching. It has potential energy. When the person lets go, what will happen to the arrow?

Assessment- Please use answers found in this packet, and sentences written relative to select pictures on their Ipad as means of a modified assessment.

Done- Paula Erickson

Section 2- Forms of Energy

Page 151- Discovery Zone

What makes a flashlight shine?

A flashlight needs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to work.

How do you make a flashlight work?

You need to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What happens to the light bulb once it is on?

The bulb gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The battery has transferred its energy to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

+ A lamp needs to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in to work.

+ A computer needs to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in to work.

+ A flashlight needs a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to work.

The sun gives off energy. Energy comes in many different forms.

What gives off energy?

A moving car has mechanical energy. A clock has mechanical energy.

Mechanical energy is a combination of potential and kinetic energy.

Boy this is hard!

Crumble up a piece of paper. Throw it. Your paper has both potential and kinetic energy. The higher the piece of paper, the more potential energy it will have.

The faster the piece of paper moves, the greater the kinetic energy.

You need to add potential and kinetic energy together. The answer equals mechanical energy.

Add them together with a calculator

Potential energy 32 Joules + Kinetic energy 45 Joules= \_\_\_\_\_.

The more mechanical energy an object has, the more work it can do.

Practice adding

Potential energy 30 Joules + Kinetic energy 90 Joules= \_\_\_\_\_.

Potential energy 10 Joules + Kinetic energy 9 Joules= \_\_\_\_\_.

Potential energy 27 Joules + Kinetic energy 36 Joules= \_\_\_\_\_.

Potential energy 18 Joules + Kinetic energy 27 Joules= \_\_\_\_\_.

Potential energy 12 Joules + Kinetic energy 85 Joules= \_\_\_\_\_.

Page 153

Other Forms of Energy- title

Copy the types of energy in the space to the right of the word.

Thermal energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Electrical energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemical energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Nuclear energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Electromagnetic energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Thermal Energy looks at the tiny, tiny parts of an object. All objects are made up of atoms and molecules.

What are all objects made up from?

Think about eating ice cream on a summer day. What happens to the ice cream?

The air is warm. It makes the particles in the ice cream move fast. The ice cream melts. What a mess!

Page 154

Electric Energy

Think about lightning. Think about getting a shock from the door. This is a type of electrical energy. What things do you play with that need batteries or electricity?

Make a list of three or more things.

Chemical Energy

Everything you see, touch or taste is made of chemical compounds. Chemical energy is saved or stored. When you eat, your body uses the chemical energy in them for energy.

Make a list of foods you eat.

When I eat I have \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to do \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Page 155- Nuclear Energy- Please Omit this part.

Electromagnetic Energy

The sunlight that you see is a type of electromagnetic energy.

Electromagnetic energy travels in waves. Microwaves and x-rays use electromagnetic energy.

What uses electromagnetic energy?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a form of electromagnetic energy.

Assessment 2- Again- please use answers used and sentences written given Ipad photos as evidence of learning grade level content.